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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,205	01/27/2006	Hironori Ueki	520.45805X00	1022

20457 7590 04/23/2007

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EXAMINER	
TANINGCO, ALEXANDER H	
ART UNIT	**PAPER NUMBER**
2882	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/566,205	UEKI ET AL.	
	Examiner	Art Unit	
	Alexander H. Taningco	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,14 and 15* is/are rejected.

7)☒ Claim(s) *12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/27/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

Receipt of the Information Disclosure Statement (IDS) with copies of the reference cited therein, was received on 01/27/2006. An initialized copy of the IDS is enclosed with this office action.

Claim Objections

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In the instant, applicant's abstract exceeds more than 150 words.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiba et al. (US 4,352,020).

With regards to claims 1, 5, 14, and 15, Horiba et al. disclose an apparatus comprising: a first storage means **54** in which measured images that are three or more transmitted images produced by rotating the scanning system about a plurality of phantoms including at least one phantom whose section perpendicular to an axis of rotation of the scanning system has different dimensions in two directions orthogonal to the axis of rotation are stored (Col. 10 Lines 48-59); a production means **23** for producing calculated images as the transmitted images through a second storage means **51** images are stored (Col. 2 Lines 57-60); and calculation; in which the produced calculated a correction means **52** for correcting intensities, which are represented by the transmitted images of the subject, according to the measured images and calculated images (Col. 5 Lines 20-30).

With regards to claims 2 and 6, Horiba et al. disclose an apparatus wherein the section of the at least one phantom perpendicular to the axis of rotation is substantially elliptic (Fig. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 4, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiba et al. (US 4,352,020) in view of Cornuejols et al. (US 5,214,578).

With regards to claims 3 and 7, Horiba et al. disclose an apparatus as recited above in claim 1. Horiba et al. fail to explicitly teach an apparatus wherein the section of at least one of the plurality of phantoms perpendicular to the axis of rotation is shaped substantially like a circle, and the center of the circle is not aligned with the axis of rotation. Cornuejols et al. teach an apparatus wherein the section of at least one of the plurality of phantoms perpendicular to the axis of rotation is shaped substantially like a circle, and the center of the circle is not aligned with the axis of rotation (Col. 1 Lines 10-11). It would have been obvious to one of ordinary skill in the art, at the time of invention to modify the invention of Horiba et al. to include an apparatus wherein the section of at least one of the plurality of phantoms perpendicular to the axis of rotation is shaped substantially like a circle, and the center of the circle is not aligned with the axis of rotation, to improve calibration methods as implied by Cornuejols et al. (Col. 1 Lines 8-12).

With regards to claim 4, Horiba et al. disclose an apparatus as recited above in claim 2. Horiba et al. fail to explicitly teach an apparatus wherein the section of at least one of the plurality of phantoms perpendicular to the axis of rotation is shaped substantially like a circle, and the center of the circle is not aligned with the axis of rotation. Cornuejols et al. teach an apparatus wherein the section of at least one of the plurality of phantoms perpendicular to the axis of

rotation is shaped substantially like a circle, and the center of the circle is not aligned with the axis of rotation (Col. 1 Lines 10-11). It would have been obvious to one of ordinary skill in the art, at the time of invention to modify the invention of Horiba et al. to include an apparatus wherein the section of at least one of the plurality of phantoms perpendicular to the axis of rotation is shaped substantially like a circle, and the center of the circle is not aligned with the axis of rotation, to improve calibration methods as implied by Cornuejols et al. (Col. 1 Lines 8-12).

With regards to claims 8 and 9, Horiba et al. disclose an apparatus as recited above in claim 1. Horiba et al. fail to explicitly teach an apparatus further comprising a phantom position calculation means for calculating the center position of a section of a phantom and an inclination of the phantom with respect to the direction parallel to the section according to the tomographic image of the phantom reconstructed based on the measured images, wherein: the production means determines a direction of projection, in which the radiation is projected in order to produce the calculated images, according to the center position and inclination. Cornuejols et al. teach an apparatus comprising a phantom position calculation means for calculating the center position of a section of a phantom and an inclination of the phantom with respect to the direction parallel to the section according to the tomographic image of the phantom reconstructed based on the measured images (Col. 4 Lines 14-20), wherein: the production means determines a direction of projection, in which the radiation is projected in order to produce the calculated images, according to the center position and inclination (Col. 3 Lines 53-57). It would have been obvious to one of ordinary skill in the

art, at the time of invention to modify the invention of Horiba et al. to include an apparatus comprising a phantom position calculation means for calculating the center position of a section of a phantom and an inclination of the phantom with respect to the direction parallel to the section according to the tomographic image of the phantom reconstructed based on the measured images, wherein: the production means determines a direction of projection, in which the radiation is projected in order to produce the calculated images, according to the center position and inclination, to improve calibration methods as implied by Cornuejols et al. (Col. 1 Lines 8-12).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiba et al. (US 4,352,020) and Cornuejols et al. (US 5,214,578) in view of Mitschke et al. (US 2004/0013240).

With regards to claims 10 and 11, Horiba as modified above disclose an apparatus as recited above in claim 8. Horiba as modified fail to explicitly teach an apparatus further comprising wherein the phantom position calculation means calculates the center position of a section of a phantom according to the barycentric position in a distribution of signal intensities represented by the tomographic image of the phantom. Mitschke et al. teach an apparatus comprising wherein the phantom position calculation means calculates the center position of a section of a phantom according to the barycentric position in a distribution of signal intensities represented by the tomographic image of the phantom [0024 Lines 23-34]. It would have been obvious to one of ordinary skill in the art, at the time of invention to modify the invention of Horiba to include an

apparatus further comprising wherein the phantom position calculation means calculates the center position of a section of a phantom according to the barycentric position in a distribution of signal intensities represented by the tomographic image of the phantom, to improve coordinate transformation as taught by Mischke et al (Abs. Lines 1-10).

Allowable Subject Matter

Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding dependent claims 12 and 13, the examiner found no reference in prior art that disclose an apparatus comprising: wherein the phantom position calculation means calculates the inclination of a phantom with respect to the direction parallel to the section of the phantom by performing linear approximation on a distribution of signal intensities represented by the tomographic image of the phantom, when taken in combination with the other limitations of the claim.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show:

Lindstrom et al. (US 5,774,519) (378/18)

- Phantom elements are formed in precise circular geometry and the center of each phantom is placed at the center of rotation

- Phantom of imprecise geometry and placed at an imprecise location

Feldman et al. (US 5,095,431) (364/431.13)

- Elliptical shape
- Calibration utilizing a single standard having a shape other than circular

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander H. Taningco whose telephone number is (571) 272-8048. The examiner can normally be reached on Mon-Fri 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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